

Application No.: 10/549,751

**List of Current Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1 - 10 (Cancelled).

11. (Currently Amended) A gas sensor module, comprising:  
a primary sensor for the registering of a gas concentration;  
a digital data memory for storing sensor data or process data; and  
a contactless interface for connecting the gas sensor module to a superordinated unit for supplying energy to the gas sensor module and for data exchange between the gas sensor module and the superordinated unit, wherein:  
said digital data memory contains one or more of the following data:  
the gas or gas mixture to be registered; a calibration date, a determined sensitivity of the sensor at a first temperature; a temperature offset; logistical information; an operating temperature range; a nominal range of gas concentration; extreme values of the operating temperature; extreme values of the operating gas concentration; identification of a technician; an in-service time; and a sensor-check-system status.

12. (Previously presented) The gas sensor module as claimed in claim 11, wherein:

said contactless interface is embodied as a contactless plug or as a socket for a complementary, contactless plug.

13. (Previously presented) The gas sensor module as claimed in claim 11, wherein:

said contactless interface comprises an inductive interface.

14. (Previously presented) The gas sensor module as claimed in claim 11, further comprising: an analog-digital converter for generating a digital signal, which is a function of an analog signal of said primary sensor dependent on the gas concentration.

15. (Previously presented) The gas sensor module as claimed in claim 14, further comprising:

a microprocessor which, on the one hand, controls the data exchange between the interface of said gas sensor module and the superordinated unit, and, on the other hand, controls reading from said digital data memory and writing to said digital data memory.

16. (Previously presented) The gas sensor as claimed in claim 15, wherein:

said analog-digital converter is integrated into said microprocessor.

17. (Previously presented) The gas sensor module as claimed in claim 11, further comprising:

a temperature sensor.

18. (Previously presented) A transmitter module for operating at least one gas sensor module as claimed in claim 11, comprising:

a contactless interface for data exchange with the gas sensor module and for energy supply of the gas sensor module; and

a communications circuit for output of at least one of the signals dependent on the measured data.

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19. (Previously presented) The transmitter module as claimed in claim 18, wherein:

said communications circuit is a circuit for generating a 4...20 mA signal, a HART-modem, or an interface for connecting to a data bus, for example a Fieldbus Foundation data bus or a PROFIBUS data bus.

20. (Currently Amended) A modular gas sensor arrangement, comprising:

a transmitter module and a gas sensor module suitable therefore, wherein said transmitter module has ~~having~~ a contactless interface for data exchange, with ~~[[a]]~~ said gas sensor module and for energy supply of ~~[[the]]~~ said gas sensor module, and a communications circuit for output of at least one of the signals dependent on the measured data, and wherein ~~and at least one~~ said gas sensor module ~~suitable therefor, which~~ includes a primary sensor, a digital data memory and a contactless interface, wherein:

said digital data memory contains one or more of the following data:

~~the gas or gas mixture to be registered;~~ a calibration date, a determined sensitivity of the sensor at a first temperature; a temperature offset; logistical information; an operating temperature range; a nominal range of gas concentration; extreme values of the operating temperature; extreme values of the operating gas concentration; identification of a technician~~[[;]]~~ and an in-service time~~[[;]]~~ ~~and a sensor-check-system status.~~

21. (New) A modular gas sensor arrangement, comprising:

a transmitter module;

a gas sensor module;

said transmitter module and said gas sensor module each having a contactless interface for connecting said transmitter module to said gas sensor

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module, for supplying energy from said transmitter module to said gas sensor module and for data exchange between said gas sensor module and said transmitter module, wherein

said gas sensor module comprises a digital data memory for storing sensor data, wherein

said digital data memory contains on or more of the following data:

a calibration date, a determined sensitivity of the sensor at a first temperature; a temperature offset; logistical information; an operating temperature range; a nominal range of gas concentration; extreme values of the operating temperature; extreme values of the operating gas concentration; identification of a technician and an in-service-time.

22. (New) The modular gas sensor arrangement according to claim 21, wherein:

the gas sensor module comprising the digital data memory and the transmitter module are arranged on opposite sides of the contactless interface.